

DEC 19 2001

U.S. Department of Commerce  
Patent and Trademark Office

Atty. Docket No.  
**28682/71114**

Serial No.  
09/870,239

# INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

**Applicant**

TIE LAN, ET AL.

Filing Date  
05/30/01

Group  
**Unknown**

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, etc.)

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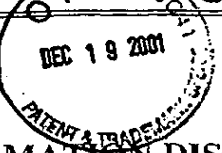
EXAMINER

Katarzyna Wyrozebska

DATE CONSIDERED


Dec 24 2003

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449		U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. <b>28682/71114</b> Serial No. <b>09/870,239</b>
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)	
KWL	C14✓ A. Okada, et al., "A Solid State NMR Study On Crystalline Forms Of Nylon 6", Journal of Applied Polymer Science, (1989), Vol. 37, pp. 1363-1371
	C15✓ A. Usuki, et al., "Swelling Behavior Of Montmorillonite Cation Exchanged For $\omega$ -Amino Acids By $\epsilon$ -Caprolactam, J. Mater. Res., Vol. 8, No. 5, May 1993, pp. 1174-1178
	C16✓ Y. Kojima, et al., "One-Pot Synthesis Of Nylon 6-Clay Hybrid", Journal of Polymer Science: Part A: Polymer Chemistry, Vol. 31, (1993), pp. 1755-1758
	C17✓ Y. Kojima, et al., "Fine Structure Of Nylon-6-Clay Hybrid", Journal of Polymer Science: Part B: Polymer Physics, Vol. 32 (1994), pp. 625-630
	C18✓ B.K.G. Theng, "Clay-Polymer interactions: Summary And Perspectives", Clays and Clay Minerals, Vol. 30, No. 1 (1982) pp. 1-9
	C19✓ Sugahara, et al., "Clay-Organic Nano-Composite; Preparation of a Kaolinite-Poly(vinylpyrrolidone) Intercalation Compound", <i>Journal of the Ceramic Society of Japan</i> , International Edition, Vol. 100, No. 4, April 1, 1992, pp. 420-423
	C20✓ Ogawa, et al., "Preparation Of Montmorillonite-Polyacrylamide Intercalation Compounds And The Water Absorbing Property", <i>Clay Science</i> , Vol. 7, 1989 Tokyo, Japan, pp. 243-251
	C21✓ Wu, et al., "Structural, thermal, and electrical characterization of layered nanocomposites derived from sodium-montmorillonite and polyethers", <i>Chemical Abstracts</i> , Vol. 119, No. 4, July 26, 1993 Columbus, Ohio, US, Abstract No. 31017r
	C22✓ Bujdak, et al., "The reaction of montmorillonite with octadecylamine in solid and melted state", <i>Chemical Abstracts</i> , Vol. 118, No. 26, Abstract No. 257609b, page 166 (28 June 1993), Columbus, Ohio (US)
	C23 Yano, et al., "Synthesis And Properties Of Polyimide-Clay Hybrid", <i>Polymer Preprints</i> , ACS, April 1991, pages 65-66
KWL	C24✓ Giannelis, et al., "Synthesis And Processing Of Ceramics: Scientific Issues", <i>Materials Research Society Symposium Proceedings</i> , Volume 249 (1992), pages 547-558

EXAMINER <i>Katarzyna Wymorelski</i>	DATE CONSIDERED <i>Dec 24, 2003</i>
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**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)**

<i>Klw3</i>	C1✓	C. W. Francis, "Adsorption of Polyvinylpyrrolidone on Reference Clay Minerals", Soil Science, Vol. 115, No. 1, 1973, pp. 40-54
	C2✓	A. Usuki, et al., "Synthesis of nylon 6-clay hybrid", J. Mater. Res., Vol. 8, No. 5, May 1993, pp. 1179-1184
	C3✓	Y. Kojima, et al., "Mechanical Properties Of Nylon 6-Clay Hybrid", J. Mater. Res., Vol. 8, No. 5, May 1993, pp. 1185-1189
	C4✓	K. Suzuki, et al., "Preparation Of Delaminated Clay Having A Narrow Micropore Distribution In The Presence Of Hydroxylaluminum Cations And Polyvinyl Alcohol", Clays and Clay Minerals, Vol. 36, No. 2, 1988, pp. 147-152
	C5✓	R. Levy, et al., "Interlayer Adsorption of Polyvinylpyrrolidone On Montmorillonite", Journal of Colloid and Interface Science, Vol. 50, No. 3, March 1975, pp. 442-450
	C6✓	D.J. Greenland, "Adsorption Of Polyvinyl Alcohols By Montmorillonite", Journal of Colloid Science, 18, (1963) pp. 647-664.
	C7✓	R.A. Vaia, et al., "Synthesis and Properties of Two-Dimensional Nanostructures by Direct Intercalation of Polymer Melts in Layered Silicates", Chem. Mater. 1993, 5, pp. 1694-1696
	C8✓	R.A. Vaia, et al., "New Polymer Electrolyte Nanocomposites: Melt Intercalation of Poly(ethylene oxide) in Mica-Type Silicates", Advanced Materials 1995, 7, No. 2, pp. 154-156
	C9✓	A. Akelah, et al., "Synthesis and Characterization of Epoxyphilic montmorillonites", Clay Minerals (1994) 29, pp. 169-178
	C10✓	C.E. Clapp, et al., "Adsorption Studies Of A Dextran On Montmorillonite", Trans. 9th Int. Cong. Soil Sci., 1968, Vol. 1, pp. 627-634
	C11✓	H.G.G. Dekking, "Préparation And Properties Of Some Polymer-Clay Compounds", Clays and Clay Minerals, 1964, 12, pp. 603-616
	C12✓	A. Usuki, et al., "Characterization and Properties of Nylon 6 - Clay Hybrid", (source and date unknown), pp. 651-652
<i>Kim</i>	C13✓	G.W. Brindley, et al., "Preparation And Solvation Properties Of Some Variable Charge Montmorillonites", Clays and Clay Minerals, 1971, Vol. 18, pp. 399-404

EXAMINER <i>Katarayno Niporekhi</i>	DATE CONSIDERED <i>Dec 24, 2007</i>
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FOREIGN PATENT DOCUMENTS								
*Examiner Initials		Document #	Publication Date	Country	Class	Subclass	Translation	
							Yes	No
KIM	B21	JP 75001156 ✓	16.01.75	JP			Abstract only	
	B22	JP 75005751 ✓	06.03.75	JP			Abstract only	
	B23	JP 75005735 ✓	06.03.75	JP			Abstract only	X
	B24	JP 75010196 ✓	18.04.75	JP			Abstract only	X
	B25	JP50029697 ✓	25.03.75	JP			Abstract only	
KIM	B26	WO 00/34377 ✓	15.06.00	WIPO				

EXAMINER <i>Katarina W. Murelski</i>	DATE CONSIDERED <i>Dec 24, 2003</i>
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Form PTO-144	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. <b>28682/71114</b>	Serial No. <b>09/870,239</b>
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		Filing Date <b>05/30/01</b>	Group <b>Unknown</b>


FOREIGN PATENT DOCUMENTS								
*Examiner Initials		Document #	Publication Date	Country	Class	Subclass	Translation	
							Yes	No
KIM	B1	1 146 668 ✓	26.03.69	UK				
	B2	DT 1 642 122 ✓	30.07.70	Germany			X	
	B3	1 565 362 ✓	16.04.80	Great Britain				
	B4	0 205 281 A3 ✓	17.12.86	EPO				
	B5	0 335 653 A1 ✓	04.10.89	EPO				
	B6	0 358 415 A1 ✓	14.03.90	EPO				
	B7	0 479 031 A1 ✓	08.04.92	EPO				
	B8	WO 93/04117 ✓	04.03.93	WIPO				
	B9	WO 93/04118 ✓	04.03.93	WIPO				
	B10	WO 93/11190 ✓	10.06.93	WIPO				
	B11	EP 0 548 940 A1 ✓	30.06.93	EPO				
	B12	EP 0 645 181 A2 ✓	29.03.95	EPO				
	B13	EP 0 761 739 A1 ✓	12.03.97	EPO				
	B14	DD 281 585 A5 ✓	15.08.90	Germany			X	
	B15	EP 0 780 340 A1 ✓	25.06.97	EPO				
	B16	EP 0 619 182 A1 ✓	12.10.94	EPO				
	B17	GB 2 088 932 A ✓	16.06.82	UK				
KIM	B18	EP 0 747 451 A2 ✓	11.12.96	EPO				
	B19	WO 96/08526 ✓	21.03.96	WIPO				
	B20	WO 98/01346 ✓	15.01.98	WIPO				

EXAMINER <i>Katarzyna Wyporek</i>	DATE CONSIDERED <i>Dec 24 2003</i>
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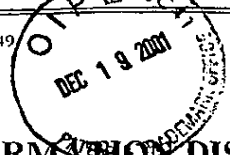
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EXAMINER <i>Katarzyna Hysoulski</i>	DATE CONSIDERED <i>Dec 24, 2003</i>
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U.S. PATENT DOCUMENTS							
*Examiner Initials		Document #	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
<i>KIWL</i>	A81	5,853,886	12/29/98	Pinnavaia et al.	428	403	
	A82	5,877,248	03/02/99	Beall et al.	524	450	
	A83	5,880,197	03/09/99	Beall et al.	524	445	
	A84	5,910,523	06/08/99	Hudson	523	213	
	A85	5,952,095	09/14/99	Beall, et al.	428	332	
	A86	5,955,094	09/21/99	Beall et al.	424	405	
	A87	5,981,029	11/09/99	Harada et al.	428	143	
	A88	5,994,445	11/30/99	Kaschel et al.	524	444	
	A89	5,998,528	12/07/99	Tsipursky et al.	524	445	
	A90	6,034,163	03/07/00	Barbee et al.	524	445	
	A91	6,050,509	04/18/00	Clarey et al.	241	21	
	A92	6,057,396	05/02/00	Lan et al.	524	445	
	A93	6,071,988	06/06/00	Barbee et al.	523	210	
	A94	6,083,559	07/04/00	Beall et al.	427	220	
	A95	6,084,019	07/04/00	Matayabas, Jr. et al.	524	445	
	A96	6,090,734	07/18/00	Tsipursky et al.	501	141	
	A97	6,124,365	09/26/00	Lan et al.	516	101	
	A98	6,126,734	10/03/00	Beall et al.	106	487	
	A99	6,225,394	05/01/01	Lan et al.	524	445	
<i>KIM</i>	A100	6,228,903	05/08/01	Beall et al.	523	209	

EXAMINER <i>Kataryna Myroslav</i>	DATE CONSIDERED <i>Dec 24, 2003</i>
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U.S. PATENT DOCUMENTS							
*Examiner Initials		Document #	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
<i>KIM</i>	A61	5,514,734	05/07/96	Maxfield et al.	523	204	
	A62	5,552,469	09/03/96	Beall et al.	524	445	
	A63	5,554,670	09/10/96	Giannelis et al.	523	209	
	A64	5,578,672	11/26/96	Beall et al.	624	446	
	A65	5,659,034	08/19/97	Debord et al.	546	2	
	A66	5,667,886	09/16/97	Gough et al.	428	331	
	A67	5,698,624	12/16/97	Beall et al.	524	445	
	A68	5,721,306	02/24/98	Tsipursky et al.	524	449	
	A69	5,730,996	03/24/98	Beall et al.	424	405	
	A70	5,747,403	05/05/98	Boyd et al.	502	62	
	A71	5,747,560	05/05/98	Christiani et al.	523	209	
	A72	5,760,106	06/02/98	Pinnavaia et al.	523	209	
	A73	5,760,121	06/02/98	Beall et al.	524	450	
	A74	5,766,751	06/16/98	Kotani et al.	428	323	
	A75	5,801,216	09/01/98	Pinnavaia et al.	523	209	
	A76	5,804,613	09/08/98	Beall et al.	523	200	
	A77	5,830,528	11/03/98	Beall et al.	427	220	
	A78	5,837,763	11/17/98	Ferraro et al.	524	449	
	A79	5,844,032	12/01/98	Serrano et al.	524	445	
<i>KIM</i>	A80	5,849,830	12/15/98	Tsipursky et al.	524	450	

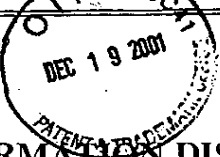
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U.S. PATENT DOCUMENTS							
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KWL	A41	4,956,121	09/11/90	Tymon et al.	252	378 R	
	A42	5,028,351	07/02/91	Kato et al.	252	315.2	
	A43	5,032,546	07/16/91	Giannelis et al.	501	3	
	A44	5,032,547	07/16/91	Giannelis et al.	501	3	
	A45	5,091,462	02/25/92	Fukui et al.	524	504	
	A46	5,102,948	04/07/92	Deguchi et al.	524	789	
	A47	5,164,440	11/17/92	Deguchi et al.	524	444	
	A48	5,164,460	11/17/92	Yano et al.	624	445	
	A49	5,204,078	04/20/93	Tateyama et al.	423	331	
	A50	5,206,284	04/27/93	Fukui et al.	524	504	
	A51	5,229,451	07/20/93	Carter et al.	524	493	
	A52	5,248,720	09/28/93	Deguchi et al.	524	444	
	A53	5,326,500	07/05/94	Friedman et al.	252	378	
	A54	5,340,558	08/23/94	Friedman et al.	423	328.1	
	A55	5,385,776	01/31/95	Maxfield et al.	428	297	
	A56	5,391,437	02/21/95	Miyasaka et al.	528	425.5	
	A57	5,414,042	05/09/95	Yasue et al.	524	789	
	A58	5,428,094	06/27/95	Tokoh et al.	524	379	
	A59	5,506,046	04/09/96	Andersen et al.	524	446	
KWL	A60	5,508,072	04/16/96	Andersen et al.	524	446	

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KIWL	A21	4,472,538	09/18/84	Kamigaito et al.	523	202	
	A22	4,500,670	02/19/85	McKinley et al.	524	445	
	A23	4,546,126	10/08/85	Breitenfellner et al.	523	216	
	A24	4,546,145	10/08/85	Kishida et al.	524	780	
	A25	4,600,744	07/15/86	Libor et al.	524	446	
	A26	4,613,542	09/23/86	Alexander	428	290	
	A27	4,624,982	11/25/86	Alexander	524	446	
	A28	4,676,929	06/30/87	Rittler	252	315.2	
	A29	4,739,007	04/19/88	Okada et al.	524	789	
	A30	4,777,206	10/11/88	Rittler	524	445	
	A31	4,789,403	12/06/88	Rice	106	417	
	A32	4,798,766	01/17/89	Rice	428	404	
	A33	4,810,734	03/07/89	Kawasumi et al.	523	216	
	A34	4,842,651	06/27/89	Ravet et al.	106	487	
	A35	4,849,006	07/18/89	Knudson, Jr.	71	64.11	
	A36	4,851,021	07/25/89	Bohrn et al.	65	17	
	A37	4,875,762	10/24/89	Kato et al.	350	357	
	A38	4,889,885	12/26/89	Usuki et al.	524	443	
	A39	4,894,411	01/16/90	Okada et al.	524	710	
KIWL	A40	4,920,171	04/24/90	Hutton, Jr. et al.	524	446	

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KIM	A1	2,035,546	03/31/36	Hamilton	167	24	
	A2	3,419,460	12/31/68	Ure	161	162	
	A3	3,419,517	12/31/68	Hedrick et al.	260	37	
	A4	3,515,626	06/02/70	Duffield	161	162	
	A5	3,773,708	11/20/73	Takahashi et al.	260	41 R	
	A6	3,795,650	03/05/74	Burns	260	33.4 R	
	A7	3,843,479	10/22/74	Matsunami et al.	161	165	
	A8	3,912,532	10/14/75	Simone	106	308 N	
	A9	3,929,678	12/30/75	Laughlin et al.	252	526	
	A10	3,929,849	12/30/75	Oswald	260	448	
	A11	3,946,089	03/23/76	Furukawa et al.	260	857 PG	
	A12	4,053,493	10/11/77	Oswald	260	448	
	A13	4,125,411	11/14/78	Lyons	106	291	
	A14	4,133,802	01/09/79	Hachiboshi et al.	528	502	
	A15	4,136,103	01/23/79	Oswald	260	448	
	A16	4,210,572	07/01/80	Herman et al.	260	40 4	
	A17	4,251,576	02/17/81	Osborn et al.	428	331	
	A18	4,400,485	08/23/83	Mukamal et al.	524	444	
	A19	4,431,755	02/14/84	Weber et al.	523	203	
KIWL	A20	4,434,075	02/28/84	Mardis et al.	252	315.2	

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